

AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A data access method used in a network system having several node devices connected for communications configured so that each node device can execute certain processing by accessing memories in said several node devices or cache memories at a higher access speed, said method comprising:

in each node device:

executing a speculative access to said memories in the system while reading out, from a tag memory, a tag information as information related to a data storage status in said cache memories provided in the system, and

deciding whether or not to abolish the data acquired from said memories by said speculative access according to said tag information read out,

wherein said tag information indicates a data storage status comprising one of three possible states, including:

- 1) data is not found in any of said node devices;
- 2) data is found in more than one of said node devices; and
- 3) data is found in only one node device;

wherein said deciding whether or not to abolish the data acquired from said memories by said speculative access is based upon a logical combination of five bits of information defining a status of said speculative access, said five bits of information comprising:

an "LV" bit that shows that reply data by a speculative read path has been returned from a local memory;

a "TV" bit that shows that a read type transaction has been received from a processor and issued;

an "HV" bit that shows that reply data has been returned from a memory unit

mounted on an other node;

a "CV" bit that shows that modified data held in the cache of a remote node has been returned; and

a "JV" bit that shows a snoop result being a "Modify found" bit that defines whether said data has been found to be currently in a cache memory in one of said node devices in said system, and

wherein said cache data is abolished when one of said following conditions exist:

LV = 1, TV = 1, HV = 0, CV = 1, and JV indicates "Modify found"; and

LV = 0, TV = 1, HV = 1, CV = 1, and JV indicates "Modify found".

2. (Currently amended) A data access method used in a network system having several node devices connected for mutual communications configured so that each node device can execute certain processing by reading out data from memories in said several node devices or cache memories at a higher access speed, said method comprising:
- in each node device:
- executing a speculative readout of data from said memories in the node devices while reading out, from a tag memory, a tag information as information related to a data storage status in said cache memories provided in the system,
 - judging whether a same data as data subject to said speculative readout is in any of the cache memories based on said tag information read out,
 - sending said speculative readout data to a processor in a self node device when the same data as the data subject to said speculative readout is not found in any of the cache memories, and
 - acquiring, when the same data as the data subject to said speculative readout is in one of the cache memories, such data in said cache memory and sending said data to the

processor in the self node device,

wherein said tag information indicates a data storage status comprising one of three possible states, including:

- 1) data is not found in any of said node devices;
- 2) data is found in more than one of said node devices; and
- 3) data is found in only one node device;

wherein said deciding whether or not to abolish the data acquired from said memories by said speculative access is based upon a logical combination of five bits of information defining a status of said speculative access, said five bits of information comprising:

an "LV" bit that shows that reply data by a speculative read path has been returned from a local memory;

a "TV" bit that shows that a read type transaction has been received from a processor and issued;

an "HV" bit that shows that reply data has been returned from a memory unit mounted on an other node;

a "CV" bit that shows that modified data held in the cache of a remote node has been returned; and

a "JV" bit that shows a snoop result being a "Modify found" bit that defines whether said data has been found to be currently in a cache memory in one of said node devices in said system, and

wherein said cache data is abolished when one of said following conditions exist:

LV = 1, TV = 1, HV = 0, CV = 1, and JV indicates "Modify found"; and

LV = 0, TV = 1, HV = 1, CV = 1, and JV indicates "Modify found".

3. (Previously presented) A data access method used in a network system as set forth in Claim 2,

wherein said speculative readout data is abolished when said data found in the cache memory is acquired and sent to the processor in the self node device.

4. (Previously presented) A data access method used in a network system as set forth in Claim 2,

wherein each node device speculatively reads out the data from the memory in the self node device while reading out said tag information from the tag memory.

5. (Previously presented) A data access method used in a network system as set forth in Claim 2,

wherein each node device speculatively reads out the data from the memory in the other node device while reading out said tag information from the tag memory.

6. (Currently amended) A network system having several node devices connected for communications configured so that each node device can execute certain processing by accessing memories in said several node devices or cache memories at a higher access speed, each node device comprising:

access means for speculatively accessing said memories in the system while reading out, from a tag memory, a tag information as information related to data storage status in said cache memories provided in the system; and

judgment means for judging whether or not to abolish data acquired from said memories by said speculative access according to said tag information read out,

wherein said tag information indicates a data storage status comprising one of three

possible states, including:

- 1) data is not found in any of said node devices;
- 2) data is found in more than one of said node devices; and
- 3) data is found in only one node device;

wherein said deciding whether or not to abolish the data acquired from said memories by said speculative access is based upon a logical combination of five bits of information defining a status of said speculative access, said five bits of information comprising:

an "LV" bit that shows that reply data by a speculative read path has been returned from a local memory;

a "TV" bit that shows that a read type transaction has been received from a processor and issued;

an "HV" bit that shows that reply data has been returned from a memory unit mounted on an other node;

a "CV" bit that shows that modified data held in the cache of a remote node has been returned; and

a "JV" bit that shows a snoop result being a "Modify found" bit that defines whether said data has been found to be currently in a cache memory in one of said node devices in said system, and

wherein said cache data is abolished when one of said following conditions exist:

LV = 1, TV = 1, HV = 0, CV = 1, and JV indicates "Modify found"; and

LV = 0, TV = 1, HV = 1, CV = 1, and JV indicates "Modify found".

7. (Currently amended) A network system having several node devices connected by a communication mechanism for mutual communications configured so that each node device can execute certain processing by reading out data from memories in said several node

devices or cache memories at a higher access speed, each node device comprising:

speculative readout means for executing a speculative readout of data from said memories in the node devices while reading out, from a tag memory, tag information as information related to a data storage status in said cache memories provided in the system;

judgment means for judging whether same data as data subject to said speculative readout is in any of the cache memories based on said tag information read out; and

read data processing means which sends said speculative readout data to a processor in a self node device when same data as data subject to said speculative readout is judged not existing in any of the cache memories and, when the same data is judged existing in one of the cache memories, acquires such data in said cache memory and sends said data to the processor in the self node device,

wherein said tag information indicates a data storage status comprising one of three possible states, including:

- 1) data is not found in any of said node devices;
- 2) data is found in more than one of said node devices; and
- 3) data is found in only one node device;

wherein said deciding whether or not to abolish the data acquired from said memories by said speculative access is based upon a logical combination of five bits of information defining a status of said speculative access, said five bits of information comprising:

an "LV" bit that shows that reply data by a speculative read path has been returned from a local memory;

a "TV" bit that shows that a read type transaction has been received from a processor and issued;

an "HV" bit that shows that reply data has been returned from a memory unit mounted on an other node;

a “CV” bit that shows that modified data held in the cache of a remote node has been returned; and

a “JV” bit that shows a snoop result being a “Modify found” bit that defines whether said data has been found to be currently in a cache memory in one of said node devices in said system, and

wherein said cache data is abolished when one of said following conditions exist:

LV = 1, TV = 1, HV = 0, CV = 1, and JV indicates “Modify found”; and

LV = 0, TV = 1, HV = 1, CV = 1, and JV indicates “Modify found”.

8. (Previously presented) A network system as set forth in Claim 7, wherein said data processing means abolishes said speculative readout data when said data found in the cache memory is acquired and sent to the processor in the self node device.
9. (Previously presented) A network system as set forth in Claim 7, wherein said speculative readout means speculatively reads out data from a memory in the self node device.
10. (Previously presented) A network system as set forth in Claim 7, wherein said speculative readout means speculatively reads out data from a memory in another node device.
11. (Previously presented) A network system as set forth in Claim 7, wherein said tag memory is provided in said communication mechanism.

12. (Currently amended) A computer readable memory storing a data access program for controlling the data access in a network system having several node devices connected for mutual communications configured so that each node device can execute certain processing by accessing memories in said several node devices or cache memories at a higher access speed, said data access program executing:

speculative access processing for the memories in the system while reading out, from a tag memory, tag information as information related to a data storage status in said cache memories provided in the system; and

processing to judge whether or not to abolish data acquired from said memories by said speculative access according to said tag information read out,

wherein said tag information indicates a data storage status comprising one of three possible states, including:

- 1) data is not found in any of said node devices;
- 2) data is found in more than one of said node devices; and
- 3) data is found in only one node device;

wherein said deciding whether or not to abolish the data acquired from said memories by said speculative access is based upon a logical combination of five bits of information defining a status of said speculative access, said five bits of information comprising:

an "LV" bit that shows that reply data by a speculative read path has been returned from a local memory;

a "TV" bit that shows that a read type transaction has been received from a processor and issued;

an "HV" bit that shows that reply data has been returned from a memory unit mounted on an other node;

a "CV" bit that shows that modified data held in the cache of a remote node has been

returned; and

a "JV" bit that shows a snoop result being a "Modify found" bit that defines whether said data has been found to be currently in a cache memory in one of said node devices in said system, and

wherein said cache data is abolished when one of said following conditions exist:

LV = 1, TV = 1, HV = 0, CV = 1, and JV indicates "Modify found"; and

LV = 0, TV = 1, HV = 1, CV = 1, and JV indicates "Modify found".

13. (Currently amended) A computer readable memory storing a data access program for controlling the data access in a network system having several node devices connected for mutual communications configured so that each node device can execute certain processing by reading out data from memories in said several node devices or cache memories at a higher access speed, said data access program executing:

speculative readout processing to read out data from said memories in the node devices while reading out, from a tag memory, tag information as information related to a data storage status in said cache memories provided in the system;

judgment processing to judge whether same data as data subject to said speculative readout is found in any of the cache memories, based on said tag information read out;

processing, when the same data as the data subject to said speculative readout is not found in any of the cache memories, to send said speculative readout data to a processor in a self node device; and,

processing, when the same data as the data subject to said speculative readout is found in one of the cache memories, to acquire such data in said cache memory and send said data to the processor in the self node device,

wherein said tag information indicates a data storage status comprising one of three

possible states, including:

- 1) data is not found in any of said node devices;
- 2) data is found in more than one of said node devices; and
- 3) data is found in only one node device;

wherein said deciding whether or not to abolish the data acquired from said memories by said speculative access is based upon a logical combination of five bits of information defining a status of said speculative access, said five bits of information comprising:

an "LV" bit that shows that reply data by a speculative read path has been returned from a local memory;

a "TV" bit that shows that a read type transaction has been received from a processor and issued;

an "HV" bit that shows that reply data has been returned from a memory unit mounted on an other node;

a "CV" bit that shows that modified data held in the cache of a remote node has been returned; and

a "JV" bit that shows a snoop result being a "Modify found" bit that defines whether said data has been found to be currently in a cache memory in one of said node devices in said system, and

wherein said cache data is abolished when one of said following conditions exist:

LV = 1, TV = 1, HV = 0, CV = 1, and JV indicates "Modify found"; and

LV = 0, TV = 1, HV = 1, CV = 1, and JV indicates "Modify found".

14. (Previously presented) A computer readable memory storing a data access program for controlling data access in a network system as set forth in Claim 13,

wherein said data access program abolishes said speculative readout data when acquiring the data in said cache memory and sends such data to the processor in the self node device.

15. (Previously presented) A computer readable memory storing a data access program for controlling the data access in a network system as set forth in Claim 13,

wherein said data access program speculatively reads out data from memories in the self node device while reading out said tag information from the tag memory.

16. (Previously presented) A computer readable memory storing a data access program for controlling the data access in a network system as set forth in Claim 13,

wherein said data access program speculatively reads out data from memories in another node device while reading out said tag information from the tag memory.

17-20. (Canceled)